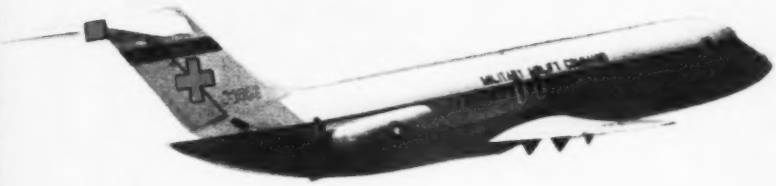
# The MAC Flyer

DECEMBER 1974



MILITARY AIRLIFT COMMAND
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# The MAC Flyer

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For Greater Efficiency
in MAC Air Operations

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Season's Greetings
from the staff of
The Mac Flyer

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# A Christmas Message

To you men and women of the Military Airlift Command I convey the warmest Season's Greetings and the sincere hope that the new year will bring you health and happiness.

This is the third time that I have extended my well wishes through the pages of THE MAC FLYER, a tradition that offers me the opportunity to speak directly to those of you who fly and support our mission.

Of all the holiday seasons that we Americans observe, Christmas is the one during which most of us pause to reflect on who we are and what our goals should be.

As members of the Military Airlift Command it is only natural that we pause to reminisce over the past year's accomplishments and look forward to the new year and what it will bring.

This past year has been somewhat unusual in that much of our flying activity was curtailed because of fuel shortages and other economic considerations. Too, we no longer were deeply committed to airlift in Southeast Asia as we had been for many years. In the wake of a more peaceful period, we embarked on the type of missions that are characteristic of our peacetime posture. These included humanitarian airlift to various parts of the world and life saving rescues along with our more routine efforts. We added a new dimension to our mission as we pioneered aerial refueling for airlift aircraft. This capability to respond to any contingency wherever required was demonstrated when two C-5s flew nonstop from Dover AFB to the Philippines, one over the northern Pacific route and the other through the mid-Pacific route. Such efforts have provided us satisfaction of the most tangible form. And whether you were flying as crew members, involved in direct support or simply performing routine administrative duties, all of you contributed to the success of these missions.

Looking ahead to the new year, we see an enlarged Military Airlift Command, the result of our having become the single manager of all military airlift. Joining us recently were thousands of former Tactical Air Command personnel, including members of the Air National Guard and the Air Force Reserve, and more than 400 active duty aircraft. Two additional bases also have hoisted the Military Airlift Command banner. This dramatic restructuring offers challenges to those who have long been in the Command, as well as to those who are just entering. The implications of this in terms of management, operations, and safety are profound.

You have all performed well during the past year and I am proud of each of you. I realize that maintaining sustained performance of this caliber has not always been easy, particularly when we are required to perform more with less. But you have met the challenge admirably and I ask you to continue these magnificent efforts during this coming year. Excellence has long been the norm in the Command and by rededicating ourselves to the sound principles of professionalism and integrity, we cannot help but make 1975 another outstanding chapter in the history of the Military Airlift Command.

As we enjoy this spiritual season, let us all give thanks that in America there is, indeed, peace on earth. And let us, through our personal relationships with others, extend goodwill to all men in our daily lives.

Mrs. Carlton joins with me in wishing you and your families the very merriest Christmas and the most prosperous 1975.

Paul K Carlton

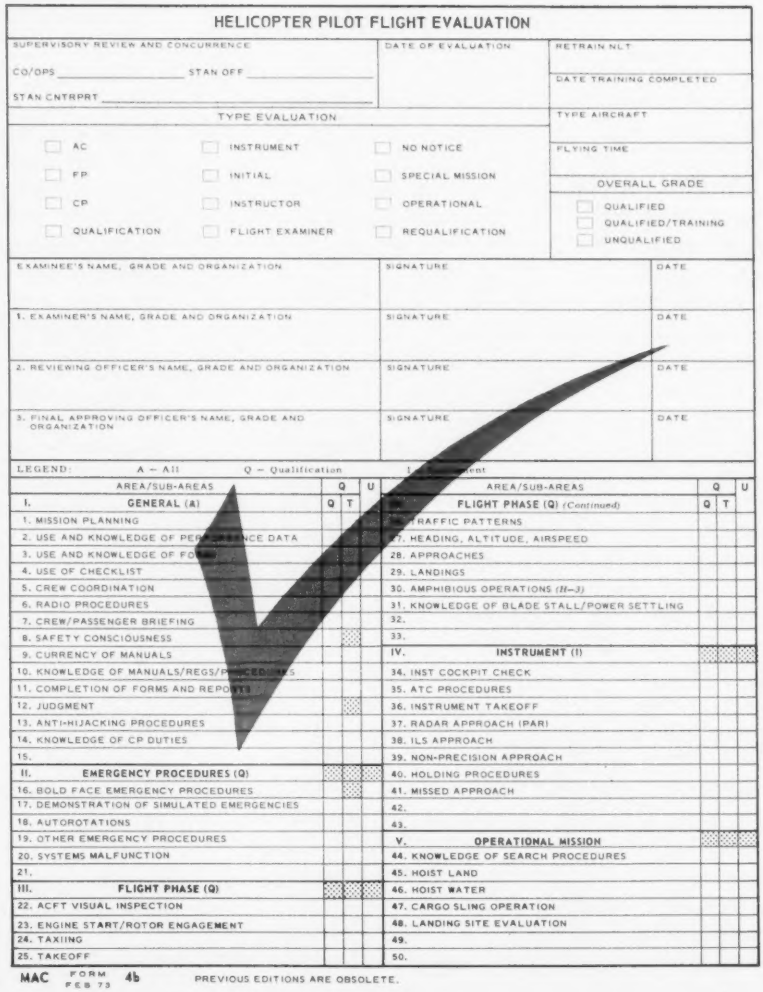
For some, check rides are no sweat. But others come down with a peculiar preflight affliction commonly referred to as . . .

# Checkitis

Some pilots are really lucky when checkride time comes around. They don't have to study hard; they have a party the night before the flight and then breeze through the evaluation as if it were "just another ride." I was never that fortunate. Why, even at the mention of the word "examination," my mind goes blank, my hands get sweaty, I lose my appetite, and suffer from insomnia. This is commonly known as "checkitis."

I've finally learned that flight examiners fall into two general categories which, unfortunately, fall at opposite ends of the personality spectrum. One can be described as the fatherly type who sits in a rocking chair during the preflight briefing. You, the examinee, usually sit on his lap. He smokes a black, stubby pipe, laughs a lot, has a long white beard, and stumbles over his bag of toys getting into the aircraft. You've seen the type — never asks difficult questions, no complicated emergency procedures, just takeoff, traffic pattern, approach and landing, make out the paperwork, and debrief. Incidentally, he goes by the name of Clause.

The other flight examiner is the one I usually get for a checkride. He has red hair, freckles, and uses vile language. Red hair covers the back of his hands, his knuckles drag the ground when he walks, he smokes a big black cigar that smells like a piece of chock rope burning, and he breathes fire when you fail to answer a simple question like,



HELICOPTER PILOT FLIGHT EVALUATION

SUPERVISORY REVIEW AND CONCURRENCE
CO/OPS _____ STAN OFF _____
STAN CNTRPRT _____

DATE OF EVALUATION

RETRAIN NLT
DATE TRAINING COMPLETED

TYPE EVALUATION
☐ AC ☐ INSTRUMENT ☐ NO NOTICE
☐ FP ☐ INITIAL ☐ SPECIAL MISSION
☐ CP ☐ INSTRUCTOR ☐ OPERATIONAL
☐ QUALIFICATION ☐ FLIGHT EXAMINER ☐ REQUALIFICATION

TYPE AIRCRAFT
FLYING TIME
OVERALL GRADE
☐ QUALIFIED
☐ QUALIFIED/TRAINING
☐ UNQUALIFIED

| EXAMINEE'S NAME, GRADE AND ORGANIZATION | SIGNATURE | DATE |
|---|---|---|
| 1. EXAMINER'S NAME, GRADE AND ORGANIZATION | SIGNATURE | DATE |
| 2. REVIEWING OFFICER'S NAME, GRADE AND ORGANIZATION | SIGNATURE | DATE |
| 3. FINAL APPROVING OFFICER'S NAME, GRADE AND ORGANIZATION | SIGNATURE | DATE |

LEGEND: A – All Q – Qualification T – Training

| AREA/SUB-AREAS | Q | T | U |
|---|---|---|---|
| I. GENERAL (A) | Q | T | U |
| 1. MISSION PLANNING | | | |
| 2. USE AND KNOWLEDGE OF PERFORMANCE DATA | | | |
| 3. USE AND KNOWLEDGE OF FORMS | | | |
| 4. USE OF CHECKLIST | | | |
| 5. CREW COORDINATION | | | |
| 6. RADIO PROCEDURES | | | |
| 7. CREW/PASSENGER BRIEFING | | | |
| 8. SAFETY CONSCIOUSNESS | | | |
| 9. CURRENCY OF MANUALS | | | |
| 10. KNOWLEDGE OF MANUALS/REGS/PROCEDURES | | | |
| 11. COMPLETION OF FORMS AND REPORTS | | | |
| 12. JUDGMENT | | | |
| 13. ANTI-HIJACKING PROCEDURES | | | |
| 14. KNOWLEDGE OF CP DUTIES | | | |
| 15. | | | |
| II. EMERGENCY PROCEDURES (Q) | | | |
| 16. BOLD FACE EMERGENCY PROCEDURES | | | |
| 17. DEMONSTRATION OF SIMULATED EMERGENCIES | | | |
| 18. AUTOROTATIONS | | | |
| 19. OTHER EMERGENCY PROCEDURES | | | |
| 20. SYSTEMS MALFUNCTION | | | |
| 21. | | | |
| III. FLIGHT PHASE (Q) | | | |
| 22. ACFT VISUAL INSPECTION | | | |
| 23. ENGINE START/ROTOR ENGAGEMENT | | | |
| 24. TAXIING | | | |
| 25. TAKEOFF | | | |

| AREA/SUB-AREAS | Q | T | U |
|---|---|---|---|
| III. FLIGHT PHASE (Q) (Continued) | Q | T | U |
| 26. TRAFFIC PATTERNS | | | |
| 27. HEADING, ALTITUDE, AIRSPEED | | | |
| 28. APPROACHES | | | |
| 29. LANDINGS | | | |
| 30. AMPHIBIOUS OPERATIONS (H–3) | | | |
| 31. KNOWLEDGE OF BLADE STALL/POWER SETTLING | | | |
| 32. | | | |
| 33. | | | |
| IV. INSTRUMENT (I) | | | |
| 34. INST COCKPIT CHECK | | | |
| 35. ATC PROCEDURES | | | |
| 36. INSTRUMENT TAKEOFF | | | |
| 37. RADAR APPROACH (PAR) | | | |
| 38. ILS APPROACH | | | |
| 39. NON-PRECISION APPROACH | | | |
| 40. HOLDING PROCEDURES | | | |
| 41. MISSED APPROACH | | | |
| 42. | | | |
| 43. | | | |
| V. OPERATIONAL MISSION | | | |
| 44. KNOWLEDGE OF SEARCH PROCEDURES | | | |
| 45. HOIST LAND | | | |
| 46. HOIST WATER | | | |
| 47. CARGO SLING OPERATION | | | |
| 48. LANDING SITE EVALUATION | | | |
| 49. | | | |
| 50. | | | |

MAC FORM 4b FEB 73 PREVIOUS EDITIONS ARE OBSOLETE.

**Honorable Mention Winner 1974 Writing Contest**

by Maj Clarence C. Campbell
ARRS/DO, Scott AFB, IL

**ABOUT THE AUTHOR**

Major Campbell graduated from Auburn University in 1960 with a degree in Aeronautical Engineering. After completing pilot training, he specialized in helicopters and has accumulated over 3,300 hours in H-19, H-21, H-3, and H-53 aircraft. He is currently assigned to the Directorate of Operations Plans, Headquarters ARRS, Scott AFB, IL.

"How many rivets are in the vibrating verticular midspansulator?" Sometimes it amazes me that I ever got through all these years of flying without busting a ride.

My first encounter with checkitis came when I was a student pilot at Stead AFB back in the winter of '61. I stood staring dumbly at the bulletin board one afternoon, afraid to believe my eyes.

"Why did they change the schedule?" I whined. "Yesterday I had the easiest check pilot in the squadron. Now I've got Carbuncle!" Carbuncle was the nickname, of course, for Captain J. T. Kunkle, one of the meanest flight examiners who ever raised a collective. He had been given the nickname because he was truly a boil on the behind of every student helicopter pilot who ever went through Stead.

Of course, I hadn't studied very hard for the check ride. That wasn't necessary when you rode with Captain Louie. He just sat there, smoking his pipe, and let you do your thing. As long as he didn't have to take the aircraft away from you, you'd pass with flying colors.

Later that evening I tossed my Dash One against the wall. No matter how much I studied, I'd never be ready for J. T. Kunkle.

Early the next morning, I slowly trudged back to the flight line like a condemned man en route to his execution. In another four hours I'd be just another in the long line of pilots who had gone into their final checkrides with good grades, only to come out bringing up the rear of the class. What did stupid check rides prove anyway, I rationalized. Only that one guy had more cool than another, or that one could memorize better than his counterparts. What really scared me was ending up "tail end Charley" and drawing that assignment to Bung Fung, Arabia!

As I sat in the briefing room, waiting for the ogre to appear, I remembered my first meeting with Carbuncle. I had reported for school a few days early, just to get my sea legs before the grind began. When I cleared through the Form 5 section, they discovered that I was a couple of hours short on my time for pay purposes.

"Better go down to the line and hitch yourself a ride unless you can afford to lose this money."

The next afternoon, I found myself sitting in on a briefing for an evaluation flight that Capt Kunkle was giving to my friend Bruce. Bruce was a tall, thin, sensitive fellow, quiet and unassuming. He was always well prepared for his daily flights and had done well in the program — that is, until this particular afternoon.

"We'll shoot some transition maneuvers here at the home field, then fly over to Sky Ranch for some emergency procedures," Carbuncle briefed.

Bruce did well in everything at the home base. Kunkle had even complimented him on his smoothness and control. I sat in the rear of the aircraft and started thinking that maybe these stories weren't really true about Kunkle.

"O.K., let's head over to Sky Ranch," I heard the check pilot say.

# Checkitis

Bruce broke traffic, climbed the H-19 to 1,500 feet and headed south toward the mountain pass that led to our alternate landing field. As we neared the pass, I watched the ground slowly pass beneath the aircraft. I watched the dry lake bed grow larger and larger until it was passing beneath the nose of the helicopter. What a far cry from the jet aircraft I had flown in training, I thought, as I reached down and cinched my lap belt tighter.

"Simulated engine failure," yelled the checkpilot. I felt myself being lifted out of my seat by the negative G's as Bruce entered autorotation. He banked the helicopter sharply to the right and started a descent to the dry lake bed.

"Go around!" I heard Carbuncle yell over the interphone. "That's the worst entry into an autorotation I've ever seen. Didn't you hear the whine of the transmission as your rotor r.p.m. bled off? In a real situation, you'd have rolled it up into a big magnesium ball. When I give you a forced landing, I want you to try and throw me out of this aircraft. Go ahead to Sky Ranch, but you'll get a marginal grade for that maneuver."

I could tell Bruce was defeated by the way he flew the remainder of the flight. He missed checklist items, touched down too hard in a running landing, and missed a couple of simple questions even I could answer. When we landed, I made a rapid exit so I couldn't hear the debrief. Bruce never discussed it with me, but he ended up in the last part of the graduating class because of his low grade on that check ride.

Now it was my turn. I was scared stiff, and my brain was fuzzy trying to figure out what he would pull on me.

"Hi, I'm Captain Kunkle. Haven't we met before?"

"I don't think so," I lied. "I'm new here."

As he explained the flight plan, I stared at him and occasionally nodded my head in understanding. His voice was only a drone in my ear, though, because I was racking my brain for a clue to his intentions.

"We'll shoot some transition maneuvers here at the home field, then fly over to Sky Ranch for some emergency procedures," he drawled.

That sounded familiar to me. It made me shudder thinking what would happen to me if he started chewing on me the way he had done Bruce that fateful day a few months ago.

The next hour was sheer madness. I went through the maneuvers like a puppet. He'd tell me what to do and I'd rattle off the requirements — r.p.m., airspeed, angle of the approach — and execute the maneuver. He had a few small comments — all very nit picky. He was positive I was lucky on a couple of maneuvers. I just flashed a nervous smile. I knew he was trying to gain my confidence, then he was going to pull the rug out from under me.

"O.K., let's head over to Sky Ranch and finish this thing up. You're doing very well."

That's the same thing he had said to Bruce, I thought. What was he planning?

As I sat there watching the ground slowly disappear beneath the helicopter, I suddenly realized that this flight was identical to the one where he pulled the sneaky autorotation on Bruce. In fact, I then noticed the dry lake bed inching toward us. Was he planning to give me a forced landing in the exact same place? Certainly, that was it! This guy had given so many checkrides, he had formed a habit pattern, and he couldn't help himself. I tightened my grip on the controls and cinched my lap belt up. I remembered he had told Bruce that he wanted to be thrown out of the seat. Well, if that's what he wanted, that's what he'd get.

"Forced —"

He didn't have a chance to get the second word out. I threw the collective down so hard I almost lost control myself. I turned the aircraft toward the largest part of the lake and finished my emergency checklist items. As I flared the aircraft for landing he yelled, "Go Around!"

I could tell I had it made after that. He sat quietly for the rest of the flight. The debriefing was short — and sweet.

"An excellent flight. It's very obvious you spent many hours in the books, and you didn't even have checkitis."

I smiled slightly to myself as I sipped a brew later on that evening in the stag bar. I'd been lucky. I knew that. If I hadn't been in the back of that helicopter that afternoon with old Bruce . . .

Suddenly, several of my chums tumbled through the swinging doors.

"Well, if it isn't old Carbuncle Campbell!" one yelled. "Did he ream you a new one today?"

"Naw," I answered in a smug voice, "he isn't so tough. All you have to remember is study hard and don't get checkitis!"

Exercises in far-off places keep MAC crews on the move. But what does it all spell?

# Strange Sounding Names

by Capt James T. Murray
MAC/DOXC, Scott AFB, IL

REFORGER I, DEEP FURROW, CRESTED CAP, BLACK HAWK, EXOTIC DANCER, BOLD FIRE. Sound familiar? For many MAC crews such strange sounding names evoke memories of midnight baggage drills, shuttling in and out of nameless bases, trips to Europe without time to enjoy the sights, and planeloads of tired, grimy soldiers in the passenger compartment.

And for MAC ALCEs, it probably stirs visions of those long 12-hour shifts that often grow into 16-hour nightmares — and temporary residences in Quick Deployment Shelters, which is just another name for tents.

In the past four years, MAC participation in Joint Chiefs of Staff exercises has more than doubled. During fiscal year 1974, C-141s and C-5s airlifted more than 46,000 troops and 25,000 tons of military hardware for exercises alone. And, believe it or not, the command expects to use an even greater percentage of its flying time this year on these large scale exercises.

Where does it all begin, and who is responsible? Each October the various unified commands prepare a five-year program. And each January command representatives develop a schedule of exercises for the following fiscal year. The schedule is determined by desired military objectives within a coordinated time frame and budgetary limitations. The final exercise schedule is published in April, after which MAC planners jump into the thick of things to plan the command's role.

Once the operation gets underway, MAC's report card is determined to a large extent by its mission reliability rate. So, along with the safety aspect of flying, one of the most important functions of aircrews is meeting the MAC Ops Order schedule.

What else can crew members do to help? Make the flight as smooth, comfortable, and relaxed as possible; troops who have been airsick for eight hours won't be worth much in the objective area.

Smooth flight control and autopilot operation and proper manipulation of the aircraft pressurization and environmental systems will help your pax. Even small crew efforts can mean a lot. Talk with your passengers and learn more of their role in the exercise if you have time. If minimum ground times are planned, forget the cup of coffee and lend a hand with the offload. In short, project yourself into the exercise and treat the mission as if it were a response to a real national emergency.

Although MAC technically flies its mission every day, support of JCS exercises is the only documented test of MAC's ability to respond to large scale contingencies. And crew members obviously form a vital part of that test.

MAC's safety record during exercises has been remarkable, thanks to the command's safety standards and the professional crews who fly the big birds. And so has MAC's overall record.

The next time you start out on a strange sounding mission whose name you may find difficult to believe, remember, it could be testing time for the command. And the difference between flunking out and making the dean's list could be the professionalism and safety consciousness you and your crew take with you into the exercise.

# Captain Richard and Crew

GOOD SHOW

Pictured: Standing, left to right: Capt William Richard, aircraft commander; 2/Lt William Langel, copilot; MSgt Hobart Lilly, loadmaster; kneeling, left to right: TSgt Raymond Gibson, flight engineer; TSgt Kenneth Honstetter, flight engineer.

Not Pictured: Lt Col James Kenna, navigator, and A1C David Brock, loadmaster.

Nearing Elmendorf AFB, Alaska, after more than nine hours of flying, the C-141 began vibrating severely. At about the same time, TSgt Raymond, flight engineer, informed Capt Richard, the aircraft commander, that the oil pressure on number one engine was fluctuating. Scanning the number one engine from the cargo compartment, MSgt Lilly, the loadmaster, reported pieces of cowling flying off. Capt Richard called for engine shutdown. He and Capt English, the copilot, and Sgt Gibson shut it down, but the overheat and fire warning lights illuminated and the vibrations continued.

After declaring an emergency with Anchorage Center, the crew prepared for the approach and landing at Elmendorf as pieces of cowling continued flying off the engine. Concerned that the flying debris would damage the flaps, Capt Richard decided to delay flap extension to minimize the risk.

The aircraft was on final approach when Capt Richard called for flaps. But as the flaps lowered, hydraulic pressure on number two system dropped to zero. Having anticipated this possibility, the crew quickly pinned the gear and reviewed the list of components that would be affected during the remainder of the approach and landing. The aircraft landed without further problems.

A subsequent inspection showed that a main bearing had disintegrated and the resulting vibration had destroyed the fire detection system and much of the engine cowling, and damaged the number one pylon. Pieces of cowling were found deeply imbedded in the horizontal stabilizer.

Timely analysis and skillful crew coordination prevented a possible aircraft accident and injury to its crew.

In recognition of this superior airmanship, THE MAC FLYER says, "Good Show," Captain Richard and crew of the 20 MAS, Charleston AFB, S.C.

# Experience: Older but not Bolder

by Lt Col John W. Ray
Supervising Editor

Webster defines experience as "an actual living through of an event or events; personally undergoing or observing something or things in general as they occur."

Webster didn't mention flying experience as such, but his definition is easily adaptable to aeronautics and has particular significance in the MAC pilot force today.

Experience is relative. In professional football, the "old veteran" might well be a 33-year-old, former All-American who has only a few years left before he's all washed up. Yet in the medical profession, a 40-year-old surgeon isn't considered a "veteran." He's just getting started. While most of the Air Force's "veteran" pilots are usually between their late twenties and early forties, many airline pilots don't hang it up until reaching 60.

The one common denominator in any kind of experience is that we usually learn from it, especially those of us in the flying business. And a fact of life in MAC today is that our pilots have

## Older but not Bolder

less experience than those who were flying the command's aircraft just a few short years ago.

MAC pilots average around 1,600 hours, compared to the 5,000-plus of the 1960s. Compare the two figures and you come up with one inescapable conclusion: less experienced pilots are flying the most advanced aircraft into some of the most hazardous airfields in the world.

"Highly experienced" throttle pushers would like to think that by virtue of having accumulated thousands of flying hours they automatically qualify for membership in an elite group of professionals. This is not necessarily true, although there is a great deal to be said for experience. All other comparison points being equal, it is probably a valid assumption that experienced pilots are somewhat safer in their approach to flying than the inexperienced. Experience implies having learned from the performance of others as well as from one's own performance. If a buddy is killed in a fiery collision on the runway, you will find yourself being extra careful taxiing onto the active runway. It's only natural. If a navigational error caused a neighbor to crash into a mountain, your flight planning will most likely become more precise; or should the pilot with whom you flew a few weeks ago land gear up, chances are you'll discipline yourself to double checking the landing gear indicators on your aircraft prior to landing — possibly without even realizing it. We identify with these tragic events because they hit home. They become part of our experience.

There are pilots who, in spite of relatively short flying careers, have gained a degree of experience which belies their total flying hours. Pilots in combat, crop dusters, barnstormers, bush pilots, and the like acquire "accelerated" experience due to the very nature of their work. But this type of experience is often costly, and the odds against accumulating much of it aren't inviting. Yet, to a lesser degree, many of MAC's low timers are also racking up "accelerated" experience.

It's no simple matter to avoid mishap while accumulating experience. It takes a great deal of self-discipline and airmanship. And the more potential mishaps a pilot sees and avoids, the more real experience he gains. But sometimes, failing to detect just one hazard is enough to terminate a career.

The pilots who wear those high-time, accident-free patches have earned them for several reasons, among which is their basic flying skill and a cautious approach to flying. A few might have squeaked by strictly by chance, but they are extremely rare.

At the opposite end of the spectrum is the inexperienced pilot who, finding himself running out of answers during a flight, throws caution to the wind and bores full steam ahead while refusing to admit his ignorance. This kind of pilot is asking for trouble. Sometimes, through no fault of their own, aircrews do find themselves unprepared for certain situations. More often than not, they avoid mishaps simply by honestly admitting ignorance and throwing up a shield of caution. An admission of ignorance may be hard on one's pride, but it's not bad for longevity. False pride, a killer of aviators throughout the years, is often deaf to ignorance. And combining ignorance with bravado is an excellent way to become an accident statistic. Old, bold pilots of this caliber are virtually extinct.

"Ignorance" or uncertainty doesn't aways apply to knowledge of aircraft and procedures nor does it always indicate nonprofessionalism. No one knows everything, although there are certain minimum standards we must meet. But ignorance is sometimes entwined with complacency (i.e., we aren't aware that we don't know something that we should). This is often referred to as having one's head up and locked. For example, the weather is near minimums and a pilot is preparing to land at a strange field surrounded by mountainous terrain. He briefs the approach and emergency procedures, but it doesn't occur to him that the published missed approach exceeds the climb capability of his heavy aircraft. He takes it for granted that no one would design such a missed approach. He accepts what he sees

**"This type of experience is often costly..."**

without question. Sound far-fetched? A MAC C-135 crashed into a mountain while flying a standard instrument departure several years ago because the departure procedures exceeded the capability of the aircraft. And that pilot had plenty of time to study the SID on the ground.

Experience tells us that multiplace aircraft provide a built-in safety factor. There are more eyes, ears, and brains available to provide certain checks and balances. Yet there is one human aspect of crewmanship that occasionally causes problems. It's the old one-upmanship game in which the aircraft commander, assuming that his crew considers him a computer of aeronautical wizardry, occasionally refuses to admit that he isn't and, thus, turns down the aid of other crewmembers, or the game in which a navigator is unwilling to admit uncertainty of position, or the scenario in which the engineer and loadmaster feign knowledge rather than ask questions that need answers. It is this occasional failure to communicate forthrightly that may void the system of checks and balances in multiplace aircraft. We know this from experience.

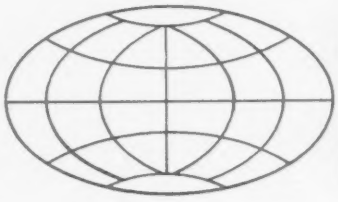
Some of MAC's old head pilots will be the first to tell you that there are times when asking a question can be just as important as answering one. Questions can keep a crew from "buying the farm." Many flights have been altered when none of the crew members could provide the solution to a serious problem. In many cases, the crew avoided problems because the unanswered question prompted a change of flight plans.

Another thing a pilot learns through the years is just how far he should push to make an on-time departure. Only the naive completely disregard the significance of station delays, but only the foolhardy will compromise the well-being and safety of his crew to avoid a delay. Lifting an obviously sick helicopter into a hover or screaming down the runway in a jet just to avoid a delay might look good on paper, but when the bird slams back to earth out of control, its pilot will suddenly find himself all alone with his new problems. After awhile pilots learn to judge when to fly and when to stay on the ground. In the absence of written guidance, the decision becomes a matter of judgment. And experience can play a vital part in any man's judgment.

## "Another thing a pilot learns..."

No one has determined at precisely what point a crew member becomes "experienced." Is it at 1,500 hours, 2,000, or 5,000? It is very likely that some step across that invisible threshold quicker than others. Unfortunately, there are those who, in spite of their thousands of hours, never get there, mentally, because they refuse to learn from the past.

And, essentially, that's what really counts — the knowledge derived from any measure of experience — and how we apply it on the next flight, day after day, year after year.



# Global Notes

## outstanding airmanship

Two MAC helicopter pilots have earned Distinguished Individual Safety Awards for their performances during in-flight emergencies:

First Lieutenant Joseph Joaquim III, Det 9, 37 ARRS, Whiteman AFB, Mo., was returning from a mission at 2,000 feet MSL when the engine of his UH-1F flamed out. He immediately assessed the situation, took corrective measures, and executed an autorotation to an open field, preventing what could have been a serious accident.

First Lieutenant Jack E. McPhie, 1550 ATTW, Hill AFB, Utah, while instructing a UF-1F transition and emergency procedure mission, saw the fuel flow drop to zero and the Nf, Nr, Ng, and T5 rapidly decreasing. Suitable forced landing areas within gliding distance were virtually nonexistent. The only possible landing place was a sod area, surrounded by light poles 50 feet high, in the center of an exit cloverleaf on an interstate highway. But despite obstacles and having to turn 180 degrees to align the helicopter with the wind, Lt McPhie accomplished a successful autorotation landing without injury to his crew or damage to his aircraft.

## 15,000 accident-free hours

MSgt Jack Deibert, 4 MAS, McChord AFB, Wash., has amassed 15,000 accident-free flying hours. A letter commending him for this achievement has been forwarded by General Carlton to Maj General Gonge, 22d AF Commander, for presentation to Sergeant Deibert. Also to be presented to Sergeant Deibert are the lapel pin and patches which will identify him as a member of the select group of MAC airmen who have attained this exceptional flying safety record.

## pierce award winner

TSgt Robert H. Cook, Det 17, 31 Weather Squadron, Lindsey AS, Germany, was recently named the 1973 weather forecaster of the year. The citation accompanying the Air Weather Service Pierce Award noted Sergeant Cook's "exceptional knowledge, outstanding professionalism, and superior operational performance while supporting the 20th Tactical Fighter Wing at Upper Heyford, England."

Sergeant Cook developed forecast studies to meet the unique needs of his customers in the United Kingdom. His knowledge of the terrain and local weather has helped him provide accurate forecasts.

# The 1975 MAC Flying Safety Writing Contest

**ABOUT THE AUTHOR**
This space reserved for authors of winning entries in the 1975 MAC Flying Safety Writing Contest.

This space intentionally left blank — but you can fill it by entering the MAC Flying Safety Writing Contest.

The 1975 contest begins in January. Here's an opportunity to get your licks in and tell it like it is. Any subject is fair game as long as it has a valid flying safety message. Draw from your own experiences out in the system, on the ramp, or around the office. Most stories submitted, including the winners, are personal recollections of unusual situations. But options are endless: fiction, nonfiction, technical, philosophy, poetry, editorials — whatever turns you on. The first place winner in the 1974 contest authored a philosophical article on flight discipline.

So let your imagination run wild. Who knows, your tale may win an award and merit your photo and by-lined masterpiece in a future issue of THE MAC FLYER.

Who can enter? You can. You don't have to be an aircrew member; maintenance and support people are vital to safe, efficient flying operations and are also urged to enter. While only military personnel and DAF civilians assigned to MAC or MAC Reserve Forces are eligible for awards, anyone can submit an entry. How about you Reserve crews who drive Boeing, Lockheed, and Douglas equipment in civilian dress?

GUIDELINES

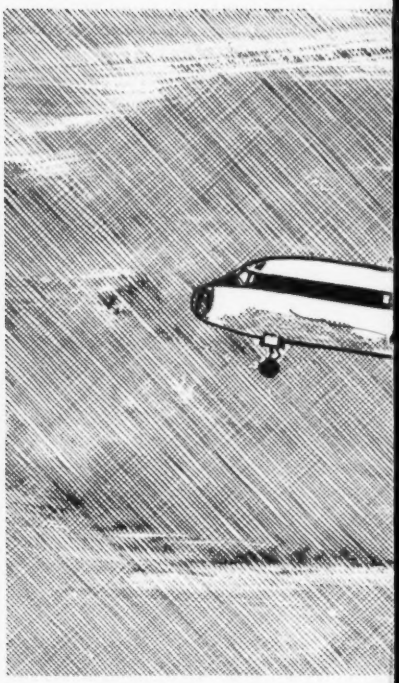
Entries must be original and unpublished. Attempt to keep each entry between 1,000 and 3,000 words. That's about six to 14 typewritten pages, double spaced. Don't sweat the grammar or spelling. We've got three full-time aces to juggle all those funny little punctuation marks and letters. Submit as many entries as you like. Each entry should be typed in two copies with no identification except the title. Then attach a cover sheet with the story title, your name, address, and a brief biographical sketch.

Mail your story to:
MAC Flying Safety
Writing Contest
MAC/IGFE, Stop 114
Scott AFB IL 62225

Entries must be postmarked no later than 31 March 1975 and must be received at THE MAC FLYER on or before 7 April 1975. But don't wait. ACT NOW!

## Mishap with a Moral:

# Bogus Approach



After having been cleared for an ILS approach to runway 10, the commercial jetliner passed the outer marker as tower reported the winds shifting to 260 degrees at 20, gusting to 30 knots.

The pilot, breaking out of the weather between 400 and 500 feet above the ground, decided on a circling approach to the opposite runway, 28, due to the wind shift.

He continued the ILS approach down to 200 feet, then banked his jetliner right to a heading of 150 degrees and climbed back up to 500 feet, just below the ceiling.

Although the ceiling was more than 300 feet below circling minimums, the captain began a left turn onto final. The tower reported winds of 250 degrees at 15 knots, gusting to 20. Nearing the end of the turn, the pilot realized he was overshooting the centerline by 500 to 600 feet, so he steepened the turn to 40 degrees to correct back.

As the aircraft floated over the threshold, the pilot started a right turn to line up with centerline. As the flaps were lowered, the airspeed dropped quickly from 150 to 130 knots and the aircraft's vertical velocity, which had been holding at 900 feet per minute, increased to 1300 to 1800 feet per minute.

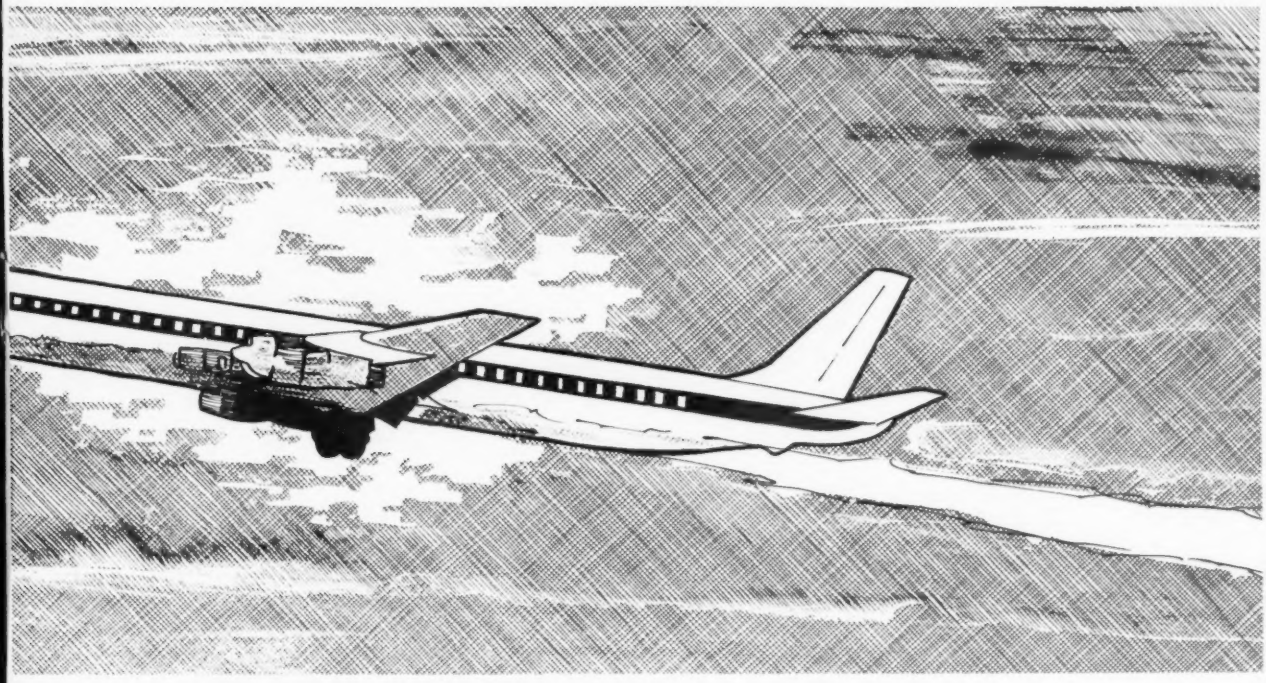
When the flaps reached 50 degrees, the aircraft pranged on the runway, bounced, and came down hard on its right main gear. During the next 3,000 feet it bounced six times as the airspeed bled off. During one of the bounces, number four engine struck the runway, causing the wing to split. Fire broke out between number three and four engines. The spoilers finally deployed and the aircraft braked to a stop more than 8,000 feet down the runway.

The captain ordered the aircraft evacuated as it rolled to a stop. Passengers and crew left the plane via escape slides and overwing exits. There were no serious injuries.

### Accident Analysis

The aircraft flight profile during the approach did not conform to standard IFR and company procedures. Circling approach procedures call for an aircraft to descend no lower than 800 feet on final and turn right 45 degrees from the runway heading for 45 seconds. Procedures also require a downwind leg that permits a 1¼ to 1¾ mile final before crossing the runway threshold.

Throughout the circling maneuver the pilot must maintain visual contact with the ground and keep the runway in sight for the major part of the procedure. Descent from circling MDA is recommended only when the aircraft approaches the extended runway centerline with the runway in view. These instructions are mandatory and only exceptional circumstances allow noncompliance.



Investigators concluded that weather conditions precluded execution of a circling approach per company directives and that the crew's ignorance of exact wind conditions contributed to a poor flight tract to final requiring abnormal maneuvering just prior to landing. No exceptional circumstance demanded an immediate landing after circling the airfield as there was sufficient fuel to permit holding, another approach or diversion to an alternate.

**Moral**

It doesn't take a Monday morning quarterback to realize that a circling approach should never have been attempted with ceiling well below circling MDA. Instead, the pilot should have abandoned the initial ILS approach to runway 10 and requested an instrument approach to runway 28 after receiving unfavorable tailwind reports at the outer marker. Perhaps a desire to "get the plane on the deck" after a cross-country flight and an approach in poor weather influenced the crew to press on. The pilots may have felt that their experience and familiarity with the airport environment placed such an approach within their capabilities. But low ceilings and adverse winds compressed the visual maneuvering airspace, overtaxing the pilot's ability.

Several different factors in the circling approach dictated go-around. But, flying barely beneath the low ceiling, the pilot circled the airport and started a premature turn to final. Strong winds blowing the aircraft toward the runway combined with sparse maneuvering room to place the aircraft in a severe overshoot condition. But, again, no go-around was attempted. Attempting to salvage a landing from a poor approach, the pilot banked sharply back toward the runway, then turned right abruptly for runway alignment over the runway threshold. Airspeed decreased, sink rate accelerated, and the aircraft landed hard and bounced back into the air. Thus, one last opportunity to go-around was ignored and the aircraft settled hard onto the runway, bouncing severely.

A combination of circumstances such as adverse winds, low ceilings, poor visibility, precipitation or aircraft abnormalities may place any pilot and aircraft in an unsafe position for an approach and landing. To recognize a poorly executed approach is one thing but to press on in hopes that it will turn out all right is foolhardy.

MAC aircrews often encounter adverse situations at airports around the world. Circumstances such as the ones in this accident often exist and pose a perpetual threat to military and civilian aircrews alike.

And the difference between landing safely and not quite making it often is the degree to which the crew follows proper procedure and exercises caution.

# *Jimmy Jet and*

Oh, do you remember a pilot named Jim?
The handsome young IP, yes, that was him.
With a look in his eye that made all the girls fret.
The Wing's golden boy, he was Jimmy Jet.

Now, Jim's only faults were his great love for fun
and aversion to MAC Reg 55-1.
'Twas late in the evening when he took his alert
and from the martinis his head it still hurt.

The day finally came; it was Jimmy's last ride.
At the counter at Elmendorf, his NAV by his side.
But his navigator's warning he chose not to heed,
"Sir, it's not enough fuel and too high a speed."

"Now I've flown this old route since the year '71.
I've 2,000 hours and you've just begun."
"So close up your fuel chart and let's make it quick.
Grab a sandwich and coffee, and I'll show you a trick."

Down at the snack bar he was such a hero;
"I've filed for flight level four-one-point-zero.
We won't need more fuel," he said with a grin.
"When you fly with me, gang, you only can win!"

'Twas the last time I saw him that perilous night.
He was just taking off on a ten-hour flight.

# the Phantom 141

by Maj Orlen L. Brownfield
MAC/DPAT, Scott AFB, IL

I saw him lift off, in the snow disappear,
As he picked up the flaps and retracted his gear.

Too heavy to get to his cleared altitude,
With Anchorage Center he was really quite rude.
"I'll hang here awhile at Angels Three-Three
and cool off my engines from TRT."

At Shemya he asked for his last en route climb,
"Forty-five thousand — we need it this time!"
But the grim voice from HF had a message that said
"Please patch the Ops Center, Yokota is red."

'Twas the last that was heard from my friend Jimmy Jet,
Though, there are some who say they hear from him yet.
Some get into trouble — now and again —
And a Phantom calls out, "Come up, channel ten."

And then on this MAC freq he gives them the facts.
"Don't fly the North PAC a-cruising at MAX.
Or you're doomed just like me, to log flying time
at 150 East and still in a climb!"

My tale has a moral, as all tales should have:
When you're flying the North PAC pay heed to your NAV.
Take plenty of fuel when making this run
and listen for Jim in his one forty one."

# "Frankly, I Couldn't Care Less"

## Chronic fatigue and complacency— are they related?

### MINI QUIZ

1. As an experienced crew member, you notice lately that you're forgetting small things or making minor errors. You are a victim of:
   a. over-experience
   b. over age in grade
   c. complacency
2. You feel, and the handbook backs you up, that Tech Order flight or maintenance procedures are guides for the inexperienced. Because of your knowledge of short cuts that work, you are:
   a. highly qualified
   b. overdue for promotion
   c. complacent
3. Over the last year, you've consistently been able to cut down on the time required to get a mission "around the horn." This is an indication of:
   a. efficiency
   b. get-home-itis
   c. complacency
4. Lately, you feel excessively tired when reporting for a late evening departure, and feel you aren't performing your best but can still cope with a routine mission. You are:
   a. fatigued
   b. overworked but dedicated
   c. complacent

By now you've probably discovered that this was a loaded quiz. None of the answers are right, nor are any incorrect. But all the conditions given are symptoms of a disease that's about as well known as the common cold — and just as dangerous to the flier.

The reactions of a crew member infected with complacency are most interesting. First, the disease strikes mainly at the experienced, those who have developed fixed patterns of behavior. The young crew member who is unfamiliar with his airplane stays alert because he has not developed confidence in either himself or his aircraft. Then, as he gains experience he acquires this confidence. It makes him a better crew member because he is more familiar with the peculiarities of his aircraft and requirements of his crew position. But it also increases his exposure to complacency.

Not just pilots pick up this germ. Navigators, crew chiefs, flight engineers, flight mechanics, loadmasters and even ground support personnel can become complacent.

The more fixes a navigator shoots, the more experience he acquires and the more mechanical the procedure becomes — and, the greater the tendency he has to become complacent. Why, some navigators can practically shoot these fixes with their eyes closed! And we've had cases of lost aircraft where this could have been the most plausible explanation.

Flight engineers can be lulled into a false sense of security by their vast experience — and many serious emergencies result from disregard or failure to take notice of minor malfunctions.

We could go on with an example for each crew position. Yes, everyone can become complacent by overconfidence in his respective job. None of us are immune to the bites of this bug.

Another way we can contract complacency is by varying procedures a little to relieve monotony or to expedite the mission. Changes may be good in those

instances where they lead to revised concepts and better mission accomplishment. But there's danger in varying procedures without careful study. You may get by with a short cut the first or second time. If so, it's human nature to try it again. But the third time your luck might fail.

Complacency can also be developed through that old nemesis, get-home-itis. Maybe you have what you feel is a legitimate reason to get home as soon as possible. Next month you won't be able to remember what it was, but today it's important. So, you push yourself and start taking short cuts. If you let get-home-itis override good judgment and sound practices even once, it will soon become your standard practice. You'll convince yourself that you've done it before and are capable of doing it again to get the job done a bit faster. Then, before you know it, you'll take short cuts on your short cuts and be headed for real trouble.

But if any one thing can lead into a complacent attitude quickly, it's fatigue. And, as aircrew members, you're really exposed. You live a different life from people in other occupations. Your hours are long and irregular; you rarely fly the same schedule. Therefore, your body rhythms are continually upset and never really become adjusted. So let's take a closer look at fatigue-induced complacency.

For identification and treatment, we classify fatigue into two types — acute and chronic. Acute fatigue is a temporary, tired feeling. You feel better after an ordinary night's rest. But chronic fatigue builds up and can't be cured by short rest periods. In fact, you might not even be able to get a good night's sleep if you're suffering from chronic fatigue.

We can best illustrate these types of fatigue with an example. Suppose you're scheduled for an 0100 departure. You get up early in the morning so you can help the wife with some commissary shopping. Then, possibly, you stop at some office on base to argue over some equipment you need, your last paycheck, or a personnel problem. Returning home, you make some repairs in your car so it will be OK while you're gone. Finally, you get everything accomplished and, about 1300, decide to get some rest. You read for awhile and finally drop off to sleep. Suddenly, with a bang and

## Care Less

a crash, the kids are home from school. There goes your sleep! Later in the evening you report to the ops center feeling tired before you start. You're acutely fatigued.

Now, put this day we've just discussed at the end of a busy month. You've flown close to the 55-1 maximum, or maybe are even on a waiver. You've flown in bad weather and through extensive turbulence. You've pounded through mounds of paperwork as an additional duty. All these have produced a steady deterioration in your performance. But you've done this for months as exercise followed crisis and crisis followed exercise. Although you're beat, you may have become complacent and feel you can still perform the mission. And in doing so, you add one more day's worth of acute fatigue to your chronically fatigued condition.

How do you recognize chronic fatigue? When you awake from sleeping, you feel washed out — exhausted, stale, irritable. You find fault with your wife or associates over trivial matters. Your appetite is poor, food doesn't have any taste. You've noticed that you aren't as sharp or demanding in your flying; you pass over details or checklist items and, frankly, "couldn't care less."

The exact point where acute fatigue becomes chronic is hard to define. But there is an eventual reduction in efficiency as well as incentive. This causes deterioration and you become accident prone.

Chronic fatigue demands immediate attention. Take leave, or go get your flight surgeon's opinion. But don't just sit at home. Pack the car and take a drive to get a change of scenery. Adequate treatment of chronic fatigue not only involves adequate rest but a break in your daily routine.

Acute fatigue, on the other hand, can be taken care of with preflight rest. This takes a little preplanning, but can be accomplished at home because your family is concerned with your welfare. When you're out on the line, however, this becomes more of a task. Crews coming and going keep transient quarters in continual chaos. Little to do and cheap drinks encourage boisterous camaraderie, or scouting the sights and visiting the natives. The pace will get to you if you don't follow a disciplined crew rest schedule.

Fatigue is easier to prevent than to cure. One other important factor in its prevention is body nourishment. Both preflight and in-flight feeding must be adequate. Take the time to eat full, balanced meals before flight. Then try a lunch from the in-flight kitchen rather than making a can of soup sustain you throughout a ten-hour flight. Peanuts and candy bars are good sources of quick energy, but they are not lasting.

Body fluid level is still another important item. We call this hydraton, and water is the best fluid to hydrate your body. Tea and coffee may taste better, but they cause you to urinate more frequently and dehydrate you. Can you remember when you had your last cup of water on a flight? If not, you are less fatigue-resistant.

Moderate exercise is another way to help reduce in-flight fatigue. If you sit too long, waste products accumulate in your body tissues and you get a sluggish feeling. Moving around helps increase your circulation and keeps you more alert.

Breathing 100 percent oxygen intermittently will also help prevent insidious fatique as well as undetected hypoxia.

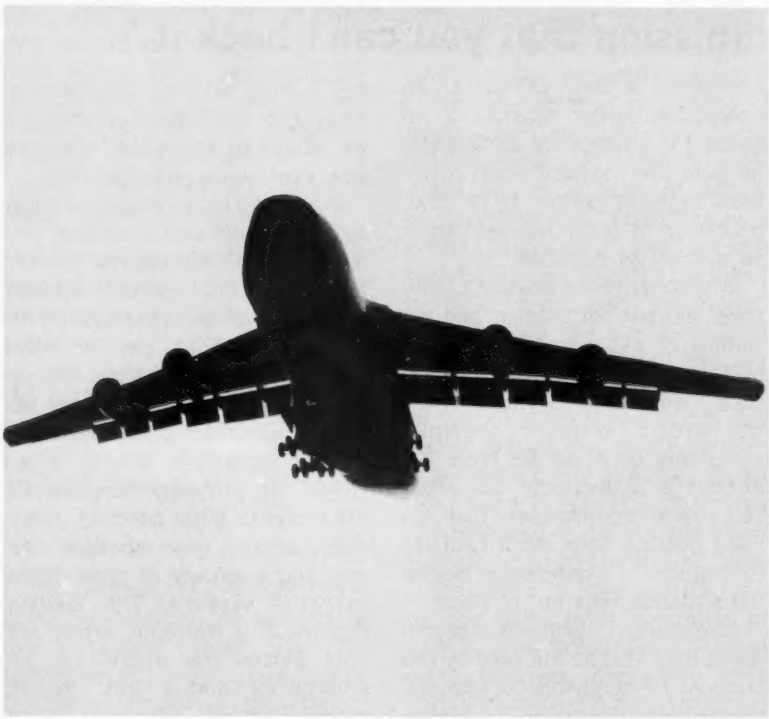
The previously mentioned factors aren't all the causes of complacency, but they are the more frequent ones. As for a cure, the best is prevention through self-discipline. Adhere to prescribed standards and prepare your body for flight just as the maintenance men prepare your aircraft. Make full use of in-flight lunches and crew bunks. Even if you aren't sleepy, stretch out and relax when you can.

Remember, complacency makes you physically present but mentally absent.

## "You'll take short cuts on your short cuts!"

# Skyhook: A Helping Hand

by Capt A. R. Barbin
Associate Editor



## If you're having problems in the sky, tune in to the experts on the ground.

You're over the initial approach fix at 6,000 feet in your C-5 on the eighth trip around the holding pattern. You attempt to rotate the left aft main gear bogey but it won't budge. Dash One operational supplements and both normal and emergency extend procedures have been reviewed and applied but the landing gear panel still shows a nagging pair of "red wheels." Is that what's troubling you?

* * * *

Nearing the end of a successful rescue mission you begin preparing your HH-53 for landing. But as you place the gear handle down, the familiar down and lock clunks don't occur this time. In fact, nothing happens. Surely, the answer lies within the yellow pages of your handy-dandy abbreviated checklist. Not this time, buddy. And fuel quantity gauges aren't helping matters much — about 45 minutes worth of fuel remains. What's your next move?

* * * *

Inbound to McChord from the Far East, Seattle Center directs you to descend to 5,000 and turn to 130 degrees for radar vectors. Passing 7,000 feet, Center issues a new vector and you punch off the autopilot. But something's wrong with the ailerons. The aircraft fails to respond to left turn inputs. A quick check of autopilot switches and lights confirms that the autopilot is disconnected. Center is immediately advised of the flight control difficulties and you request a 4,000-foot block altitude to assess aircraft difficulty. Maybe a right turn will

# Skyhook: A Helping Hand

work. Applying normal control pressure isn't enough. More muscle finally forces the yoke to rotate — two, three, five degrees of bank, and that's it. Rudder and elevator response appear normal. The ailerons are not exactly frozen stiff, but it's damn difficult to turn right and impossible to turn left. It feels like there's something binding somewhere but you're not sure. Hydraulics and electrics are okay. Nothing in section three of the Dash One remotely addresses such a problem. Meanwhile, ceiling and visibility are dropping, as is your fuel quantity. Nav says about two plus two five play time and that's to dry tanks. Some hassle — now what?

* * * *

These not-so-hypothetical situations illustrate one point. Emergency situations sometimes arise that exceed the crew's nuts 'n bolts knowledge and their capacity to correct an in-flight malfunction. Throw poor weather conditions and low fuel into the pot with a perplexing aircraft problem and you've got a crew that needs help in a hurry.

In MAC, assistance in such cases is available around the clock. Just call the nearest MAC operations center and ask for a "Conference Skyhook."

**What Is Conference Skyhook?**

Even if you've never had the occasion to use Conference Skyhook, you've doubtlessly heard of it if you've been around MAC very long. Conference Skyhook is a managerial conference that provides technical expertise and assistance via communications patch to MAC aircrews experiencing airborne emergencies or unusual in-flight situations. Key "Skyhook" personnel on call for such emergencies include a broad cross section of talent at wing, numbered air force, and MAC levels as well as experts from the civilian aircraft industry. Personnel from many areas, such as operations, standardization, logistics, safety, aircraft manufacturing companies, and communications make up a Skyhook team. And when a Duty Officer in an operations center receives a request for emergency assistance, he gets the Skyhook team members together either by a telephone or in a conference room, as quickly as possible.

Who determines whether conditions warrant notification and assembly of a Skyhook team? Any MAC aircraft commander may initiate Conference Skyhook when his aircraft displays abnormal symptoms or when he feels his aircraft is in jeopardy. So, when you aircraft commanders feel you need outside help, don't hesitate to request a conference before the situation gets out of hand.

Conference Skyhook procedures may also be initiated by the supervisor of flying, operations center duty controller, or higher authority as conditions warrant. MACR 55-3 requires that, unless specifically directed otherwise by the Commander of MAC or the aircrew, Conference Skyhook will always be activated during a hijacking or hijacking attempt. What this all boils down to is that if any MAC aircraft needs help, anyone in the operational chain of command, from the aircraft commander up to COMAC, has the authority to initiate Conference Skyhook.

**The Necessity**

The necessity for airborne assistance evolved from increased aircraft complexity and the increase in strategic airlift capability represented in aircraft like the C-141 and C-5. MAC aircrews and their aircraft constitute a national asset that must be safeguarded. General Paul K. Carlton, MAC Commander, directed in 1973 that existing communications and conference procedures be refined to assist MAC aircrews who experience emergencies.

**"A request for assistance during trying moments in the sky is not an admission that you can't hack it."**

Advanced technology in aircraft system design and operation has dramatically increased aircraft reliability. But current aircraft technology also means system interdependence — one or more aircraft systems that are dependent upon another for proper operation. Consider a key hydraulic system on a C-5, C-141, or an HH-53. It probably supplies its life blood to flight controls, flaps, slats, landing gear, spoilers, servos, and a variety of other flight essential systems. The sudden rupture of a hydraulic artery not only places the aircraft in an emergency status but, in all probability, will adversely affect the flight profile and aircraft recovery.

The intensity of emergencies varies. On one end of the scale are the simple emergencies that are well within a crew's capacity to correct. But many emergencies fall on the opposite end of the scale. These are the compound emergencies in which everything seems to go to hell in a hurry. An engine is shut down for low

oil pressure, wiping out one hydraulic system in the process. Then, two more generators trip off the line for reasons unknown. The copilot places the gear handle down and the left main stops at barber pole as destination weather drops intermittently below minimums. Such situations may call for technical expertise, troubleshooting analysis, and flight planning far beyond the scope of the crew's knowledge or the Dash One guidance. So what do you do next? Assuming air to ground communications are possible, first, keep the aircraft right side up and take care of the bold print items. Then, request Conference Skyhook and give the experts a crack at your problems. Chances are that many of these people have previously encountered similar emergencies.

Requests for assistance during trying moments in the sky are not admissions of inadequate crew performance — far from it. Using all available facilities indicates the professional attitude that air and ground teamwork is the best way to resolve difficult problems. So don't hesitate.

### How It Works

The nucleus of Conference Skyhook communications patches is the operations center. The duty controller normally quarterbacks the initial stages of the conference. When he receives a call from a MAC crew experiencing airborne troubles, he starts the Skyhook checklist. He gathers such data from the crew as position, fuel load, the nature of the difficulty, and the crew's intentions. The controller then coordinates with the appropriate numbered MAC air force. He'll also pass to the crew the en route and destination weather, operational data, and a suggested initial course of action. He may ask you to stand by while representatives from operational and support agencies assemble. Remember, many in-flight problems are resolved at the wing or numbered air force level but some may require MAJCOM and factory conference coordination.

Once everyone is "on the line" or assembled in a huddle at the ops center, Conference Skyhook gets down to business. Conferees examine every aspect of the emergency, such as which systems are adversely affected, the fuel status, weather, possible diversions, crew qualifications, maintenance availability at potential recovery airfields, and passenger and cargo details. These are carefully evaluated before a plan of attack is recommended. Facts, assessments, questions, and recommendations are shuttled back and forth to crew and conference members via the ops duty controller. Normally, he'll be the crew's only contact. When Conference Skyhook recommends corrective procedures, they'll normally be relayed and executed much like a scroll checklist — challenge and response — particularly when aircraft components are involved.

It's going to take a little time for the ops center controller to notify and assemble division representatives, especially after normal duty hours. But regardless of the hour or day, key personnel are on call and will respond when needed. While the ops center controller is getting it all together, the crew should make use of this time by gathering all emergency details. Information such as visual descriptions, system(s) status, actions already taken, cockpit indications, warning lights, gauge readings, and any other readily available data may help experts on the ground expedite their analysis and recommendations.

### Communications

UHF or VHF frequencies are generally used to link up the crews to Conference Skyhook. But what about crews experiencing emergencies beyond the UHF or VHF range of an ops center? If such a crew is well out over an ocean or flying across remote continental areas, HF is the answer. Contact any Air Force HF aeronautical station and request a comm patch to a MAC air force or MAC headquarters. Civilian ARINC HF frequencies may also be used in this manner.

Communications with a MAC operations center can easily be established in the CONUS. Ops centers dot the landscape along the shores of both U.S. coasts. Chances are that you'll be within UHF range of at least one of these ops centers. If not, FAA Air Route Traffic Control Centers can provide communication patches to MAC ops centers through discreet frequencies.

### Don't Hesitate

No one can accurately predict when or where a MAC crew will experience an emergency flight condition that may exceed the knowledge, training, and experience of the crew. But if it does happen to you, the measure of success may lie within invisible lines of air to ground and ground to air communications — and that intangible referred to as teamwork.

So if your day in the sky has turned out to be a bad one, and your attempts to improve upon it fail, don't ignore the army of talent on the ground. Instead, depress the "mic" button and request "Conference Skyhook."

Visions of Christmas in the Sierras lure the Master Manipulator into hasty decisions that result in big trouble over the Pacific.

Chestnuts roasting on an open fire. Jack Frost nipping at your —" The Masterful Minstrel ceased his musical indulgence as his flight engineer approached. "Can see it now, Sergeant Torque. When we get home it'll be well deserved crew rest, a few days in front of a warm fire at my Lake Tahoe cabin, holiday spirits, roast duckling, intellectual conversations with Tassles — er, Miss Taylor —" The engineer stopped C. R.'s verbal reverie.

"Sir, you still think we'll get this bird fixed in time to make it home today? We only have a few minutes before we have to go into crew rest and today's the 24th. That oil leak was pretty bad when we landed here at Hickam."

"M'boy, m'boy, must I keep reminding you to trust your able leader? Why, with me ramrodding these minor maintenance discrepancies, we'll be on our way home in no time at all."

The sergeant eyed his aircraft commander skeptically. He remembered the Starlifter's fluctuating oil pressure and loss of oil quantity on descent and felt the engine problem went much deeper than a loose B-nut. He wished the boss had let him write it up in the forms.

He reported to his AC. "Maintenance found the oil leak on their thru-flight inspection. They're looking for the source of the leak now. Number four engine used a lot of oil on this leg."

"A minimal drip I'd say. Why the maitre d' at Francois' spills more from a flagon of beaujolais than we lost coming into Hickam."

"I'd say it was more like uncapping a shook bottle of beer," retorted the concerned engineer. "By the way, sir, how is your attitude indicator? Is it still cocked a few degrees off? You seemed to have difficulty keeping the wings level on the approach."

"Harrump, well, er, no. The ADI is fine. We'll let home station maintenance take a look at it. We don't want to go G-NORS and miss getting out of here." The Aviator with Avoirdupois was eagerly awaiting the Christmas present Tassles had promised and didn't want a delay.

Waddling around the aircraft to the number four engine, the Rotund One observed a beehive of activity. Mechanics scurried to locate and repair the oil leak. They had been told that the aircrew must get airborne soon or go into crew rest.

"How's it going, Sarge?"

"Well, sir, we're not sure where the leak's coming from yet. We should know soon. Looks pretty bad though," replied the mechanic.

Studying his large silver 24-hour chronometer, the Aerial Ace mentally calculated his time remaining before scheduled takeoff time. "Let's see, the way I figure it, in about the time it takes me to finish one Egyptian Oval those wrench turners will have that engine signed off."

The mechanic was sympathetic but honest. "We'll do everything we can to get you off on time, but it looks pretty doubtful."

"Just wipe that excess oil off and button 'er up, Sarge. I'll take the responsibility for this. And, make sure the oil tank's full."

Walking to the edge of the ramp, the Deadly Decision Maker fingered a zipper on his flight suit and withdrew his ebony cigarette holder. Mating it to his favorite cigarette, he drew hard on the weed. As he looked up, Long Sufferin' Sam exited from a crew bus.

"Hi, boss. Everything's filled out and in order — except the aircraft. The ops center said we were going to have to crew rest. Boy, I wanted to get home by Christmas Day."

Drawing up his face in a painful expression, the Thespian Emeritus scolded no one in particular. "Those ops weenies, what do they know? It's a conspiracy — yes, that's it. They're trying to keep me from my holiday with Tassles. A minor oil leak won't delay our departure. In fact, I instructed the maintenance folks to close the cowling for an immediate takeoff."

The surprised copilot watched the bandy-legged airman head for the aircraft and break out into another holiday song.

"Deck the halls with boughs of holly, fa-la-la-la . . ."

This aircraft commander can do anything, thought Sam.

Engine start and taxi-out went fast. "Time's a wastin'," echoed the Master Manipulator of Wires and Tires. When the number two compass failed near the runway, the Dauntless Driver continued to rationalize.

"Look at it this way, Blinky. With aviators like us, who needs an extra compass? After all we have the number one compass plus the standby compass."

* * * *

C. R. jerked the C-141 off runway zero eight, rounded Koko head and climbed eastward over the Pacific.

"As usual, years of experience coupled with a no-nonsense approach to the problem overcame a mechanical malady. Don't know what you guys would have done had I not been along to move the mission. Consider this your Christmas present."

The rest of the crew sat in silence as the rounded man boasted. The aircraft continued skyward through an area of towering cumulus. Past the Hawaiian ADIZ, boiling CBs forced the crew to deviate from their desired track. The navigator frantically tried to keep an accurate position plot but the Aerospace Ace continued his skyward gyrations — sometimes a 40 degree bank added a strain on the aircraft and crew.

"Pilot, nav. We just lost the number one compass and number two hasn't moved since taxi-out. All fuses and circuit breakers are okay." Blinky couldn't see around C. R.'s bulky frame to the

instrument panel. Had he been able to see the pilot's ADI cocked lazily to the side, he would have known that the number one compass had not failed but was merely in the D.G. mode.

"A fine state of affairs," returned the Lothario of the Airlift Game. "We'll just have to DR on to Travis. Don't want to turn back now or it'll be crew rest at Hickam for sure. Let's see, yeah, the standby is just fine."

The other crew members shot inquisitive glances at the pilot. Press on across the ocean without an accurate compass? Before anyone could collect his wits and comment, the engineer reported another problem.

"Pilot, engineer. Sir, we have fluctuating oil pressure and high oil temperature on number four engine. Looks like we should have gotten that oil leak fixed before takeoff."

"Fluctuation's due to turbulence, my good man. As soon as we get past this weather, the engine will settle down for the long flight home. These fan-jets will operate for hours without lubrication — we'll just ease 'er back a little — there we go."

What began as a faint flicker blossomed into a glow on the sunlit instrument panel.

Long Sufferin' Sam was first to notice the warnings. "Major Terror, take a look at the number four fire handle. I thought I saw a light a moment ago."

"Just the sunlight up to one of its tricks, Sammy. Nothing to be alarmed about," laughed the World's Greatest Aviator.

"I don't think it's the sun, sir. Look, the light is on steady now!" exclaimed the flustered right-seater.

"Uh, suppose it's a short circuit?" challenged C. R.

"Pilot, engineer. The oil fluctuation is getting worse on number four engine. We'd better shut it down, and quick!"

"Feather — ah, shutdown number four engine, I mean checklist, er, Sammy pull the handle. Sergeant Ty Downs, scan number four stove pipe for fire indications."

"Yes sir, I'm back in the cargo compartment and number four looks like it's on fire. The engine is coming unglued through the cowling — and into number three engine. Oh, wow —"

"Be calm my good man. Sergeant Torque, do you have any adverse indications on number three engine?"

"Yes sir. All hell's breaking loose on it— r.p.m. fluctuations, oil pressure drop, and a rise in e.g.t. We'd better shut it down."

The Able Helmsman began barking instructions. "Sammy, extinguish the fire on number four engine and pull the fire control handle on number three. We'll return to Hickam for a quick fix before continuing on."

The two pilots were still thrashing around in the cockpit, but the two engines on the right side began cooling down. Number four engine ceased rotating as the bearings welded themselves to the turbine discs. With the threat of fire now removed, a two engine emergency return faced the Pudgy Pilot.

"Pilot, nav. Sir, take up a heading of two-seven-zero for Hickam. We're quite a bit off course, I think."

"Don't be harried, m'boy. Been listening to Aku on radio station KGMB since departure. We'll home in on it till we can pick up the Koko Head VORTAC."

The Starlifter limped back toward the islands. Inaccurate homing on an island radio station caused it to diverge south of track beyond the radar sweeps of Honolulu Center.

"Sir, this is the nav. I think you're heading too far South. You should pick up a heading of 295 degrees to get to Hickam, now."

"Tut, tut. The NDB is leading us directly to the station and in a short time we'll be able to see the familiar outline of Diamond Head. Why, when I first started flying, we were lucky to have such a fine navigational aid as this transistorized radio."

Disregarding all other aids to navigation, the Stubborn Steersman continued on to what he thought would be the safety of runway zero eight at Honolulu International Airport. Strong northerly winds, frozen compass cards, and waivering NDB bearings soon had the Starlifter crossing the Hawaiian ADIZ 195 miles south of course, heading toward Pago Pago.

Sufferin' Sam bolted upright as he peered out the side window. A pair of Hawaiian Air National Guard F-102s were riding shotgun on the big MAC jet. As he reported this sighting to his boss the interceptor flight leader called on guard frequency.

"MAC Heavy 234, this is Sidewinder 02. What are your intentions?"

"Whaaaa, gulp, 'er, ah, oh, tell him we're heading to Hickalulu. Tell him to keep his six-shooter holstered. Ask him for a vector to the nearest runway, Sammy!"

"Sidewinder 02, this is MAC 234," gasped the copilot. "We're on two engines. Request vectors to Hickam, or the nearest suitable runway, over."

"MAC, you're a long way from Hickam, buddy. You must have navigational difficulties. Hilo Airport is two o'clock at one-hundred-and-fifty miles. It's the closest strip to your present position."

Deflated somewhat, the Master of Excuses steered toward Hilo. "We'll land there and assess the damage to this silver plated sailplane," croaked C. R.

Descent and landing were reminiscent of unusual attitudes and stall recoveries. The aircraft touched down halfway down the runway at Hilo and stopped on the overrun following maximum braking action. Ground observers spotted deflating tires as fuse plugs failed from excess brake heat. The crew emerged from the C-141 to analyze the situation.

"Major Terror, I don't think we're going to make it home for Christmas Day after all," declared Sergeant Torque.

"You may be right, m'boy, but look at it this way. Through my superior skill, we got on the deck safely. In no time at all we'll get some maintenance men down here from Hickam to fix this bird for our journey home. In the meantime, let's review the situation on the beach. Mai-Tai, anyone?"

"Sir, are you Major Terror?" asked the approaching airport manager.

"Sure am, m'good man. What can I do for you?" replied the Master Manipulator.

"Hickam Operations Center wants to talk to you on line two at the passenger counter."

A few minutes later, C. R. returned to his crew, now seated on the ramp in front of the aircraft.

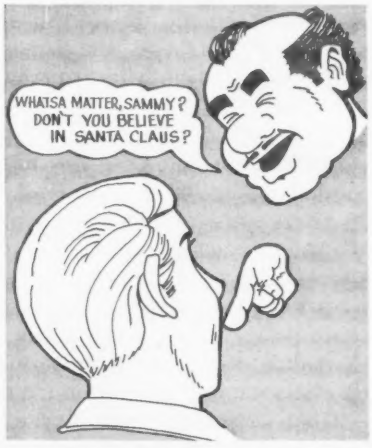
"Keep your seats; no need to rise, gang. Those Ops center weenies told us to stick around the aircraft for awhile. A Herky Bird is on the way down here from Hickalulu with a couple of colonels aboard — a Colonel Slam and a Colonel Hammer. Never heard of 'em. Ho hum, we'll delay toddy time just a mite," soothed the Master of Mai-Tai.

" Sir, I think you're in a heap of trouble. You have any idea who those colonels are or where they're from?" blustered Sergeant Torque.

"The Air Force is full of colonels. What difference does —"

"Colonel Slam is from MAC Standardization and Hammer is Chief of Maintenance at Hickam. I've been stationed off and on through the years with both of those colonels. Slam is like Kojack and Hammer is like Columbo — they always get into the nitty gritty of things. And, believe me sir, they always get their men," emphasized the engineer.

"Ugh! Sammy m'boy, what we need now is a miracle. Maybe Santa can head off that Herky Bird and swing by this island paradise with a couple of new engines and compasses. What's a matter, Sammy? Don't you believe in Santa Claus?"




"No, boss! Not any more."

# Quick Stoppers

## Gaseous Nausea in Flight

As the aircraft climbed toward cruise altitude, passengers on the four engine jet noticed gasoline leaking from a portable ground heater unit in the rear of the aircraft. Crew and passengers went on 100 percent oxygen but not before some of the passengers experienced nausea. The crew declared an emergency, descended to 10,000 feet, and depressurized the aircraft. An uneventful landing followed.

The heater gas tank had been serviced to three quarters capacity in accordance with command deployment procedures. But the unit was positioned with the filler neck toward the rear of the aircraft and was tied down with the rear of the unit tilted downward. This position shifted the fuel load to the back of the tank and into the filler neck. Aircraft climb attitude amplified the fuel shift even further and, as cabin altitude increased, trapped air within the tank expanded, forcing gasoline out of the filler cap vent.

Little things have a way of growing into major problems in flight, a fact that aircrews often learn through sad experience.

## Studs Backed Off

Not long after takeoff, a T-39 experienced moderate engine vibration and a sudden oil pressure drop on number one engine. The pilot retarded the throttle to idle and then stopcocked the oil starved engine. Ten minutes after takeoff, the single engine Sabreliner settled onto the runway without further hassle.

It didn't take long for maintenance inspectors to figure out why number one engine dumped its oil supply. Most of the oil filter studs were backed off, allowing the pressurized oil supply to exit via the tailpipe.

Looking further into the incident, investigators found that the engine had been changed the day before. During the swap, someone hadn't used their tech data properly — the studs were not torqued in the proper sequence. That "someone" was tracked down and retrained in the use of tech data.

## Whitchey Switchey

During a local HH-1N training flight, a four to five percent torque split and fuel flow fluctuation caught the pilot's eyes. Suspecting an automatic fuel control glitch on one of the engines, the pilot reached for the manual fuel control switch and asked the copilot to read the checklist. Meanwhile, the pilot removed his hand from the fuel control switch to change radio channels. When he re-focused his attention on the fuel control problem, he inadvertently selected the main fuel shut-off switch, shutting down one of the engines.

(Expletive undeleted.) The pilot called for the restart checklist and got the engine back on the line with manual fuel control selected. Back at the ranch, maintenance troops confirmed that the automatic fuel control had failed.

The HH-1N driver paid for his mistake at the O' Club bar. Now he visually checks those cockpit switches before he flips them.

## VHF Antenna Causes Flameout

Yep! You read it right. Returning to home base, number two engine on a VC-131H (Convair turboprop) flamed out without warning, relit, and flamed out a second time. The crew feathered the prop and landed without incident.

Investigators discovered that a deteriorated VHF antenna mast allowed moisture to drain down through the inside channel of the mast onto the fuel and ignition panel. Investigators believe that moisture accumulation shorted the number two engine fuel and ignition switch, causing intermittent engine operation. The engine and associated systems checked out okay during post flight inspection.

It's enough to cause one to believe anything is possible.

## Out of the Sun

In spite of our sophisticated air traffic control radars, approach control radar, and automated IFF altitude and position readouts, the threat of mid-air collisions is still very real. Recently, a C-141 on vectors for an ILS approach nearly caught a bug smasher. A yellow and white Cessna 150 or 172 flew out of the sun and passed 50 feet from the 141's right wing tip at the same altitude and heading. The light aircraft took no evasive action.

# Cargo Leaks Plague Starlifter Crew

As a C-141 winged its way westward across the Atlantic, the crew discovered fluid leaking from wooden crates in the cargo compartment. Checking the manifest, the loadmaster identified the crated items as Navy submarine oxygen generating cells. Returning to the cargo, he noticed that the liquid was chemically reacting with the metal pallet and the cargo floor. The pilot decided to return to his departure base. The crew radioed traffic at the base and requested that it identify the substance which was eating away at the pallet and floor. Traffic thought it was alcohol, but after the plane landed, traffic representatives identified the liquid as sea water.

After crew rest, the crew found the aircraft pretty much as they had left it — liquid spill included. Quality control personnel responded to another crew plea for assistance. This time, inspectors concluded that the liquid was acid. They neutralized the spill with baking soda. The crates were broken down and inspectors decided they were now ready to ship. Following aircraft structural inspection, the aircraft was released for flight.

Nearly halfway across the Atlantic, more leaking crates prompted the aircraft commander to again head back to his departure point. This time a passenger, a Navy chief petty officer and submarine engineer, inspected the crates. He identified the liquid as hydrochloric acid mixed with sea water. Rounding up some aircraft first aid kits, the Navy engineer used anti-acid tablets to temporarily neutralize the acid.

After the aircraft landed, the Navy chief stated that the leaky generators should have been flushed with demineralized water, drained, and dried prior to shipment.

Shippers are responsible for properly packing their cargo, but too often packaging is performed improperly and discrepancies go undetected at Air Force bases. In this case, an alert crew and a knowledgeable Navy chief who just happened to be along probably prevented a serious incident or accident.

# after deadline . . .

CREW COORDINATION AND DISCIPLINE -- In a few recent instances aircrews have made bad situations worse because of faulty information passed to the aircraft commander. Improper engine-out go-around speeds, exaggerated assessments of aircraft degradation, and "no sweat" assumptions are a few of the pitfalls which have played a part.

Regardless of its status, the aircraft is the total responsibility of the aircraft commander. He is charged with bringing it in safely. But he can't do it alone. He is dependent upon other crew members for assistance, particularly during in-flight emergencies when he must make critical decisions based on their inputs. Since he can't be everywhere and doesn't have access to every control system, his engineers, copilots, flight mechanics, scanners, loadmasters, and navigators are his eyes and ears. If one of them confuses an assumption with a fact, the safety of the entire crew and aircraft could be jeopardized.

Panic and emotion -- like complacency -- have no place in the cockpit, flight deck, or any other crew position.

NEW FLIP PLANNING -- Be on the lookout for a new FLIP Planning that should be simpler, neater, and easier to use. The new format will appear in the 30 January 1975 issue. Functionally arranged into two parts, General Planning and Area Planning, it eliminates much of the duplication in the old model.

WANTED -- One associate editor for THE MAC FLYER. Must be a major or captain, pilot or navigator, with at least one year in a primary MAC line flying position. Desired, but not mandatory, is former writing background. Applicant should have reasonable writing ability and, more importantly, a strong desire to write. For more information, contact: Supervising Editor, THE MAC FLYER, MAC/IGFE, Scott AFB IL 62225.

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# Touch and Go

HELLO CAPT SMITH. SO YOU THINK I GIVE EASY CHECKRIDES. HO, HO, HO.